Windbreak/Shelterbelt

Conservation Practice Job Sheet ***380***

Natural Resources Conservation Service (NRCS) ***April 1997***

Landowner_____

Definition

Windbreaks or shelterbelts are plantings of single or multiple rows of trees or shrubs that are established for environmental purposes. The height of the tallest row and overall density of foliage and branches of an individual planting greatly influence the size of the nearby area that is protected or sheltered.

Purpose

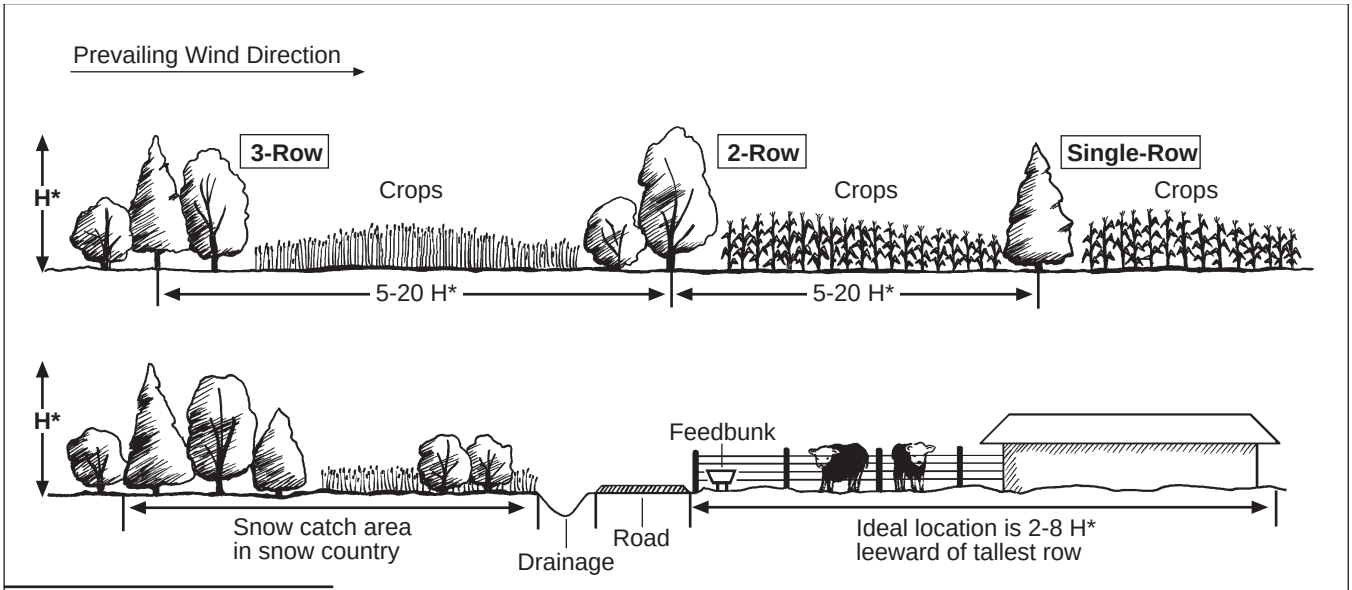
Windbreaks or shelterbelts are generally established to protect or shelter nearby leeward areas from troublesome winds. Such plantings are used to reduce wind erosion, protect growing plants (crops and forage), manage snow, and improve irrigation efficiency. Windbreaks also protect structures and livestock, provide wildlife habitat, improve aesthetics, and provide tree or shrub products. Also, when used as a living screen, windbreaks control views and lessen noise.

Where used

Windbreaks are “environmental buffers” that are planted in a variety of settings, such as on cropland, pasture, and rangeland (sometimes referred to as “living barns”), along roads, farmsteads, feedlots, and in urban areas.

Conservation management system

Windbreaks and shelterbelts are normally established concurrently with other practices as part of a conservation management system. For example, proper crop rotations and tillage techniques and management of residue in fields (conservation crop rotation and residue management) work with windbreaks to control wind erosion.



A windbreak or shelterbelt usually consists of multiple rows, with shrubs in the outer rows and taller trees in the interior. Complementary practices work with these environmental buffers to further control wind erosion and snow deposition and modify site characteristics for habitat and screening purposes. For comprehensive protection of a field, windbreaks are placed in a series across the area (typically spaced at intervals of 5 to 20 times the height of each windbreak), with individual windbreaks running parallel to one another, but perpendicular to prevailing winds.

Wildlife

For plantings to function properly, access by livestock and certain wildlife must be managed year-round (use exclusion and fencing). Connecting shelterbelts with existing or planned perennial vegetation, such as woodlots and woody draws (tree/shrub establishment) or riparian areas (riparian forest buffer), provides additional benefits for wildlife and aesthetics. Select native or adapted species that provide wildlife food or cover.

Operation and maintenance

Trees and shrubs in the windbreak or shelterbelt need periodic maintenance and, later on, possible renovation (tree/shrub pruning and windbreak/shelterbelt renovation). In arid areas windbreaks may need supplemental water or water harvesting techniques for successful establishment.

Specifications

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See practice standard Windbreak/Shelterbelt Establishment code 380.

Multiple-row windbreak protects farmstead and provides wildlife habitat.

Windbreak/Shelterbelt ÐSpecifications Sheet

Landowner_STARX RANCH_____ Field number_____

Purpose (check all that apply)	
☐ Reduce wind erosion	☐ Provide wildlife habitat
☐ Protect growing plants (crops, forage, other)	☐ Provide a living screen (view and noise control, other)
☒ Manage snow	☐ Improve aesthetics
☐ Provide shelter for structures (farmstead, house, other)	☐ Improve irrigation efficiency
☐ Provide shelter for livestock	☒ Other (specify): Living snow fence

Location and Layout	
Width (ft.; include widths of maintenance areas next to outer rows): 79 ft.	
Length (ft.): 300 ft.	Area (ac.): 0.5 ac.
Total area of zone protected/sheltered (ac.; based on expected height and density of the windbreak/shelterbelt): 1.5 ac.	
Additional requirements: Summer fallow area; work once before tree planting	

Woody Plant Materials Information

Species/cultivar by row number		Kind of stock[1]	Planting dates	Plant-to-plant distance (ft) within row	Total number of plants for row	Distance (ft) between this row and next row[2]
1	Caragana	BA	1st wk May	4	75	20
2	Rocky Mountain Juniper	BA	1st wk May	10	30	15
3	Rocky Mountain Juniper	BA	1st wk May	10	30	15
4	Sea-buckthorn	BA	1st wk May	4	75	20
5						
6						
7						

[1]BAreroot, COntainer, CUtting; include size, caliper, height, and age as applicable. [2]Adjusted for width of maintenance equipment.

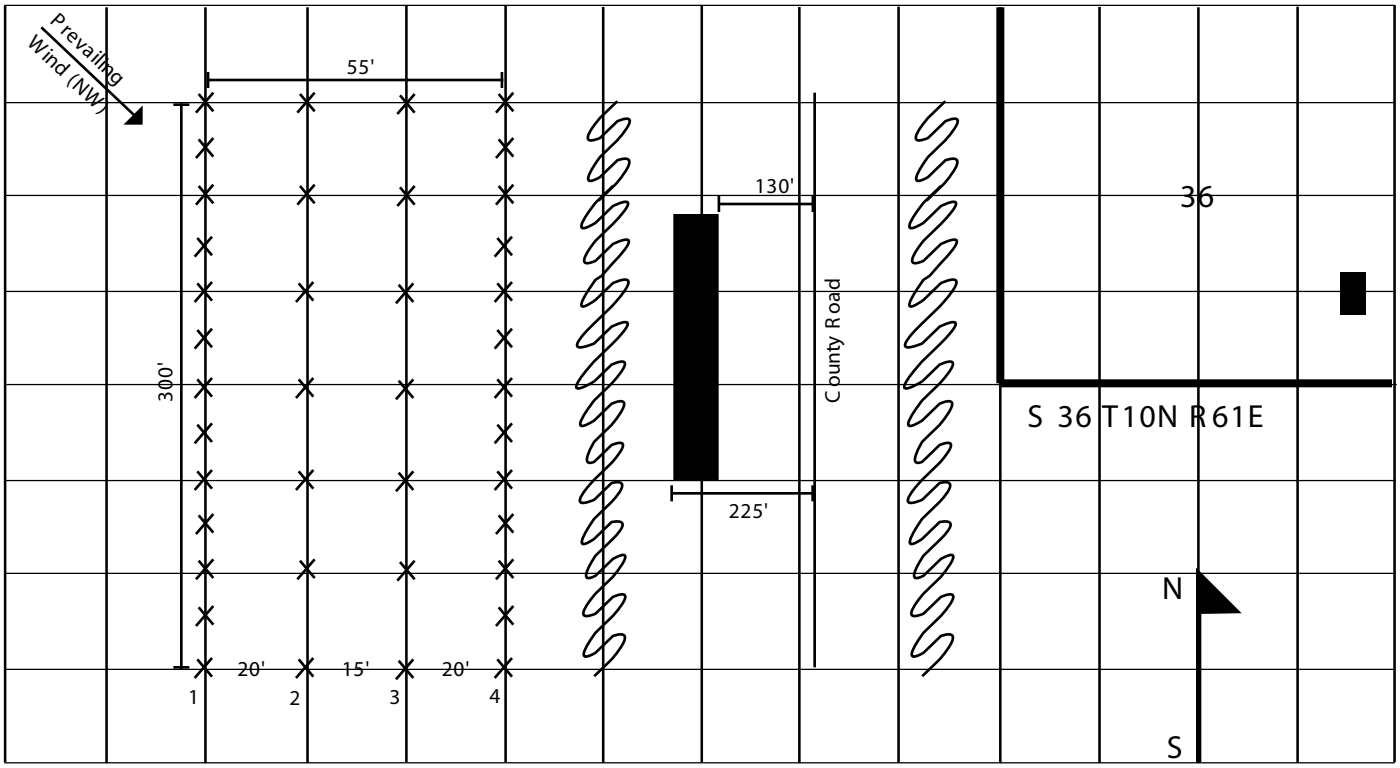
Site Preparation
Remove debris and control competing vegetation to allow enough spots or sites for planting and planting equipment. For plantings requiring supplemental moisture, prepare and ready applicable materials for installation. Additional requirements:
Temporary Storage Instructions
Planting stock that is dormant may be stored temporarily in a cooler or protected area. For stock that is expected to begin growth before planting, dig a V-shaped trench (heeling-in bed) sufficiently deep and bury seedlings so that all roots are covered by soil. Pack the soil firmly and water thoroughly.
Planting Method(s)
For container and bareroot stock, plant stock to a depth even with the root collar in holes deep and wide enough to fully extend the roots. Pack the soil firmly around each plant. Cuttings are inserted in moist soil with at least 2 to 3 buds showing above ground. Additional requirements:

Windbreak/Shelterbelt Maintenance
The planting must be inspected periodically and protected from damage so proper function is maintained. Replace dead or dying tree and shrub stock and continue control of competing vegetation to allow proper establishment. For plantings requiring supplemental moisture, install and begin operation of the irrigation system. Periodically prune trees and shrubs to repair environmental damage and maintain plant health and vigor. Additional requirements:

Windbreak/Shelterbelt Ð Job Sketch

If needed, an aerial view or a side view of the windbreak/shelterbelt shown below. Other relevant information, such as complementary practices and adjacent field or tract conditions including structures and crop types, and additional specifications may be included.

Scale 1"=___NA___ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")



Additional Specifications and Notes:
* Begion Row 4 at about 150' from road
Row 1 would then be at 205' from road
Need 4 rolls of fabric 6'x300' - vegetation control
CTSG-6D